

**The Transition of GTDS
to
the Unix Workstation Environment**

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Future Flight Dynamics systems should take advantage of the possibilities provided by current and future generations of low-cost, high performance workstation computing environments with Graphical User Interface. The port of the existing mainframe Flight Dynamics systems to the workstation environment offers an economic approach for combining the tremendous engineering heritage that has been encapsulated in these systems with the advantages of the new computing environments.

This paper will describe the successful transition of the Draper Laboratory R&D version of GTDS from the IBM Mainframe to the Unix workstation environment. The approach will be a mix of historical timeline notes, descriptions of the technical problems overcome, and descriptions of associated SQA issues.

The detailed list of topics to be addressed includes:

1. Mainframe version enhancements at CSDL

Elimination of Assembly language routines
Elimination of dependence on H-Fortran Library routines
Removal of Overlay

2. Porting to the VAX VMS environment

Compile issues
Run-time issues

3. Porting to Unix environment

the Sun SPARC
the SGI

4. Porting the Databases

Potential Models
Atmosphere Models
SLP files
Misc.

5. Database Maintenance: Porting TRAMP

6. Running GTDS under Unix:

JCL replacement
File system issues
Printing system issues

7. Validation and SQA

- Test Suite
- Results
- Numerical Accuracy (Floating Point formats)
- Speed
- Configuration Control/Traceability
- Commonality Issues

8. Adding a User Friendly Menu Driven User Interface to drive GTDS

- User Interface
- Data Dictionary
- GTDS_Executive: creating the "card" deck file